

**AMENDMENTS TO THE CLAIMS**

**This listing of claims will replace all prior versions and listings of claims in the application:**

**LISTING OF CLAIMS:**

1. (Currently Amended) A circulating fluidized bed reactor comprising a reaction chamber connected by an acceleration duct to a centrifugal separator for separating particles from hot gases coming from said reaction chamber, wherein at least part of the acceleration duct is inside the top of the reaction chamber and the centrifugal separator has substantially straight vertical walls in transversal section.

2. (Previously Presented) A fluidized bed reactor according to claim 1, wherein all of the acceleration duct is inside the top of the reaction chamber.

3. (Previously Presented) A fluidized bed reactor according to claim 1, wherein the acceleration duct has an inlet mouth substantially perpendicular to the extrados of the duct.

4. (Previously Presented) A fluidized bed reactor according to claim 1, wherein the acceleration duct has an inlet mouth substantially parallel to the extrados of the duct.

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5. (Previously Presented) A fluidized bed reactor according to claim 1, wherein the centrifugal separator and the reaction chamber have a common wall.

6. (Previously Presented) A fluidized bed reactor according to claim 1, wherein the centrifugal separator and the rear cage have a common wall.

7. (Previously Presented) A fluidized bed reactor according to claim 5, wherein the reaction chamber and the rear cage have a common wall.

8. (Previously Presented) A fluidized bed reactor according to claim 1, wherein the combination of the reaction chamber, the separator and the rear cage constitutes a basic module.

9. (Previously Presented) A fluidized bed reactor according to claim 8, wherein the reaction chamber and the separator have aligned exterior walls.

10. (Previously Presented) A fluidized bed reactor according to claim 8, wherein the power of the reactor is a function of the number of basic modules used.

11. (Previously Presented) A fluidized bed reactor according to claim 8, wherein two adjacent modules have a common wall.

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12. (Previously Presented) A fluidized bed reactor according to claim 11, wherein the wall common to two modules and between two separators is a partial wall.

13. (Previously Presented) A fluidized bed reactor according to claim 8, wherein the reaction chambers of two adjacent modules are combined.

14. (Previously Presented) A fluidized bed reactor according to claim 8, wherein the rear cages of two adjacent modules are combined.

15. (Previously Presented) A fluidized bed reactor according to claim 1, wherein the interior wall of the reaction chamber includes an inlet deflector of the acceleration duct.

16. (Previously Presented) A fluidized bed reactor according to claim 1, wherein the walls are tubed.

17. (Previously Presented) A fluidized bed reactor according to claim 16, wherein the walls of the acceleration duct and the separator and the bottom wall and the top wall of the reaction chamber are covered with a layer of refractory material.

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18. (Previously Presented) A fluidized bed reactor according to claim 16, wherein the walls of the portion of the acceleration duct inside the reaction chamber use tubes from the walls of the reaction chamber.

19. (Previously Presented) A fluidized bed reactor according to claim 16, wherein the walls of the portion of the acceleration duct inside the reaction chamber use tubes from the walls of the separator.

20. (Previously Presented) A fluidized bed reactor according to claim 1, wherein the walls of the acceleration duct consist of tubes forming a separate circuit.

21. (Previously Presented) A fluidized bed reactor according to claim 16, wherein the walls of the portion of the acceleration duct between the reaction chamber and the separator consist of tubes from the walls of the reaction chamber and the separator.

22. (Previously Presented) A fluidized bed reactor according to claim 15, wherein the deflector consists of tubes diverted from the walls of the reaction chamber.

23. (Previously Presented) A fluidized bed reactor according to claim 1, wherein a deflector is formed by rounding the tubes of the floor of the duct.

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24. (Previously Presented) A fluidized bed reactor according to claim 1, wherein the floor of the duct is inclined toward the separator.

25. (Previously Presented) A fluidized bed reactor according to claim 1, wherein the floor of the duct is inclined toward the extrados of the duct.

26. (Previously Presented) A fluidized bed reactor according to claim 1, wherein the section of the exterior and interior walls of the duct changes more than once.

27. (Previously Presented) A fluidized bed reactor according to claim 1, wherein the gases are evacuated from the centrifugal separator via a vertical duct situated inside said separator and which directs the gases toward the bottom of the separator.

28. (Previously Presented) A fluidized bed reactor according to claim 27, wherein the duct is placed in the middle of the separator.

29. (Previously Presented) A fluidized bed reactor according to claim 27, wherein a deflector is placed at the top of the separator.

30. (Previously Presented) A fluidized bed reactor according to claim 28, wherein the deflector has a section at least equal to that of the flue gas evacuation duct, its position is

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substantially aligned with that of the evacuation duct, and its height is less than that of the constant section portion of the separator.

31. (Previously Presented) A fluidized bed reactor according to claim 1, wherein the separator is carried by at least one of the evacuation ducts of the separator.

32. (Previously Presented) A fluidized bed reactor according to claim 1, wherein the rear cage is horizontal.

33. (Previously Presented) A fluidized bed reactor according to claim 1, wherein the rear cage is situated under the separator.

34. (Previously Presented) A fluidized bed reactor according to claim 1, wherein the rear cage is placed on concrete slabs.

35. (Previously Presented) A fluidized bed reactor according to claim 1, wherein a secondary separator is placed between the main separator and the rear cage.